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IT Legacy – Dusty but Valuable

Legacy Modernisation Challenges IT Managers

Start-ups are lucky: They can build new systems without taking existing ones into account. But, some day a successful start-up will become a company with a grown IT structure. So, the subject "legacy modernisation" is an everlasting topic. On invitation of the COMPUTERWOCHE, IDG's weekly IT magazine in Germany, modernisation experts from seven companies discussed which problems can be solved and how.

Everyone is talking about the digital transformation. Almost everyone thinks of the digital first and only a few think about the transformation. However, most companies do not start on a greenfield, their systems and applications often have grown over decades, programmed in different languages, optimised for platforms of all kinds and connected with each other with sometimes adventurously built bridges.

With the digital change, the pressure to modernise legacy applications is growing in many companies.
Foto: Gorodenkoff - shutterstock.com

Throwing away the grown systems and re-developing everything is utopian, because these systems are mission-critical for their companies: the knowledge contained therein cannot easily be replaced. "Legacy means heritage and should be something positive", says Stefan Tilkov, CEO of innoQ Deutschland GmbH based in Monheim, Germany. The only reason the term has a negative connotation is that the "inherited" applications are so inflexible. Making them faster, more flexible and more agile is the goal of the legacy modernisation.

Many companies feel the pressure to modernise – and not only since yesterday. Large corporations, many authorities but also the larger medium-sized companies have many a legacy skeletons in the closet. However, only the extremely data-driven companies especially in the financial sector are willing to provide budgets for their revitalisation.

In other companies, modernisation projects sometimes sail under false colours. Gunnar Tacke, Managing Business Analyst at Capgemini has noted, "Mega IT budgets were provided in connection with the buzzword digitisation which now are primarily invested in the modernisation of the core systems."

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DELTA software technology

Why Legacy Modernisation?

As a result, almost a modernisation boom is emerging. Consultants and system houses benefit from it as well. Axel Rupp, partner at Deloitte Consulting GmbH, identifies four drivers for this "constantly growing market":

- The developers who have the technical and the business know-how of the applications will gradually retire in the coming years (technical jargon refers to this as "Brain Drain")
- Agility, efficiency and speed are increasingly dominating the implementation of business requirements. The older systems cannot keep up.
- The same applies to open interfaces and interoperability in the system landscape, which meanwhile have become key factors.
- The operating costs of the grown systems, especially on the mainframe, are very high compared to virtual environments or cloud approaches.

However, the demand for modernisation is by no means limited to the mainframe. "This is not a platform discussion, but a discussion about business-critical systems, " reminded Georg Lauer, Senior Principal Business Technology Architect at CA Germany GmbH, his discussion partners. Many companies really wanted to keep their mainframes, and they were looking for ways to integrate them sensibly into a modern environment.

On the other hand, also users who have never had anything to do with mainframes have problems with legacy. According to innoQ CEO Tilkov, there are "tons of Delphi , C++ or Java programs that nobody can maintain anymore".

Services and Micro Services

These problems are not new. Ten years ago, the COMPUTERWOCHE wrote, "Valuable Resource Legacy Code: Save It Who Can". In fact, the reuse of existing software was already a topic at software engineering conferences in the past millennium. And many companies still port part of their software code to newer programming languages, e.g. from COBOL to Java. In the opinion of Rupp, such a scenario is preferable to a re-development in terms of project duration, costs and RoI.

Also on the application level, concepts have long been developed that allow the continued usage and integration of technically outdated applications. At the beginning of the millennium, the SOA (service-oriented architecture) caused furore, it was further developed into "micro services". Both share the idea of deconstructing the applications into manageable components ("services") and addressing them via connection layers (e.g. an enterprise service bus).

Such an architecture is technically demanding. To ensure that the monolithic legacy applications fit in there, they have to be split up according to their business logic. It is not enough to add a new frontend to the application, Tilkov warns, "The exciting logic is in the backend". But, deconstructing the business-critical applications requires an "enormous feat".

Lift & Shift as Temporary Solution?

For this reason, many companies decide to do a "lift & shift" first. Henning von Kielpinski, Vice President Business Development and Alliances at ConSol Software GmbH, Munich, speaks here of an approach where "a system is relocated to an encapsulated

environment, e.g. a public cloud, with a minimum effort".

Von Kielpinski admitted that ConSol has often overlooked this step and promoted complex solutions such as micro services instead, but not without a reason. With "lift & shift", the applications are not even touched, the legacy (in the sense of being a burden) is simply thrown over the fence and the responsibility is partly left to the cloud provider.

This cannot be a permanent solution, says the ConSol manager. "For a real modernisation you have to take the knife and cut up the systems to understand how they work." The IT industry is also already providing assistance, for example in the form of the container technology, which is considered as legitimate successor to virtualization.

Into the Cloud: When the Hybrid Approach Promises Success

Containers allow you to split an application across different technical platforms - including all cloud variants. Not only micro services are often provided in the cloud by third parties. Increasingly, companies are also outsourcing all or part of their self-developed applications to externally operated environments.

However, many still shy away from outsourcing the mission-critical components of their IT landscape. They like to raise security concerns or regulatory constraints. The sluggish acceptance of the "German Cloud", however, suggests that this argument is only a pretext.

Be that as it may, the companies prefer to keep parts of their systems to themselves. As a result, they often have a "hybrid environment". Basically, the roundtable participants see this trend as promising. Von Kielpinski, however, does not think much of overstraining it, "Some things simply don't work in a hybrid way, and if the idea does not impose itself, it's no use trying it by force."

Re-development is Again In Vogue

The counterpart to the integrated services on the development side is a standardised development environment that covers different programming languages. The developers can therefore work in their familiar environment and with new "agile" methods as well, but they develop against a standardised interface and within the framework of a macro process that is mandatory for all.

"We need a consistent development environment and corresponding processes which are independent of the programming language," demands Daniela Schilling, CEO of Delta Software Technology GmbH. For this, even long-time developers would have to learn a new process again. But, that should not cause a problem if the process is clearly defined and taught with intensive training.

As part of a new development environment, it is also possible to create structures where the application development works hand in hand with the IT operations. Such "DevOps" systems are especially recommended for applications that must be changeable "on the fly".

Already this discussion proves that the re-development of antiquated applications or the individual extension with new application systems are no taboo topics - not

only where the market does not yet provide suitable offers or, for example, when the maintenance of one component expires. “IT is no longer seen as an annoying cost factor but as competitive,” Tilkov said, “so today, companies are again increasingly developing their software themselves .”

Standardisation is Often Painful

For the time being, the run on standard software is rather passé. “Everything that can be reasonably standardised is already standardised,” stated Andreas Espenschied, who, as Senior Vice President at Software AG, is responsible for the business development of the database and development environment “Adabas/Natural”, “If you want to standardise beyond that, it gets painful, because then it is about the DNA of the company. “

Possibly, the “Magellan” project of the Deutsche Bank, launched in 2010 with a great fanfare and passed away nearly unnoticed about two years ago, has contributed to spreading a certain amount of scepticism. Even with a lot of goodwill - and an ample budget - probably not all business processes can be mapped into standard software without losses.

Learning from Past Mistakes

The “monster projects” of the past no longer exist today anyway. This has not only been observed by innoQ CEO Tilkov. And another thing struck him, “Today, the development is executed from the very beginning in a way that a modernisation hopefully gets easier in the future.”

Nobody really needs a transformation that tomorrow already will be water under the bridge. Whoever touches his IT architecture should rather trim it immediately for maximum flexibility and extensibility. “We have to think about the evolutionary potential of architecture,” says Capgemini’s analyst Tacke.

A “sustainable” architecture in this sense certainly includes not only the development environment and the (micro) service-oriented structure but also the processes. Espenschied is therefore concerned about a “continuous modernisation process” that enables the permanent evolution and provision of new business functions - which is after all the core task of IT.

Tilkov goes even a step further: the (IT) organisation also needs to be modernised. After all, the processes that have been established around the development and maintenance of the legacy applications are also anchored in the organisation. Therefore, it is rarely sufficient to modernise just the technology, “Organisation and processes also have to change. In contrast to that, the COBOL modernisation is a piece of cake."

Educating the Staff

The question remains, who should actually undertake these tasks. Because they are not exactly a dream job for IT employees. Tilkov puts it in a nutshell, “New employees often do not want to get involved in a recaptured, proprietary environment, spoiling their CV. Hipsters want cool stuff.” On the other hand, especially the young people today want to do “meaningful” things and to contribute to the company's success. At this point, the youngsters may possibly be grabbed.

Lauer, too, is by no means pessimistic in the matter of staff requirements. His employer CA Germany builds

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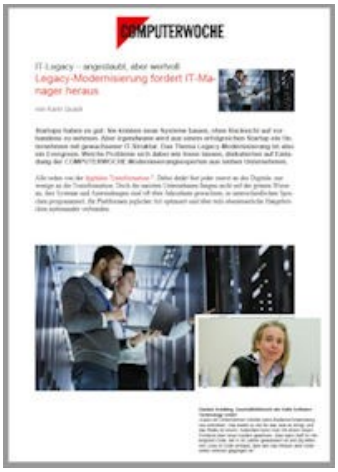
the know-how himself, "We have a training centre in Prague where we train young people on the mainframe, who we then also employ in our development centre."

The closing word belonged to Delta CEO Schilling: It is quite understandable that especially IT beginners like working at a start-up with the latest technology. However, on closer inspection some of the cool companies may not be quite as cool.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